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EXAMINER

POPHAM, JEFFREY D

ART UNIT PAPER NUMBER

2137

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/931,069

Applicant(s)

GILBERT ET AL.

Examiner

Jeffrey D. Popham

Art Unit

2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET-TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-20 and 26-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-20 and 26-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 20060224
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Remarks***

Claims 18-20 and 26-46 are pending.

***Response to Arguments***

1. Applicant's arguments, see Remarks, filed 3/3/2006, with respect to the rejection(s) of claim(s) 18-20 and 26-46 under 35 U.S.C. 102(e) and 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made with Zubeldia (U.S. Patent 6,397,224) in view of Morar (U.S. Patent 6,678,822), Halamka (Halamka et al., "Managing Care in an Integrated Delivery System via an Intranet", 1998, pp. 1-5), Garvin (Garvin et al., "Ensuing Statewide Newborn Screening by Linking the New Jersey's Electronic Birth Certificate and Newborn Screening Databases", 12/1/1998, pp. 1-2), and/or Schneier (Schneier, Bruce, "Applied Cryptography", Second Edition, 1996, pp. 193-194).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 18-20, 37-39, 41-44, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zubeldia (U.S. Patent 6,397,224) in view of Morar (U.S. Patent 6,678,822).

Regarding Claim 18,

Zubeldia discloses a method for linkage of de-identified records, comprising:

Obtaining client de-identified records, the client de-identified records comprising field-level encrypted match codes (Column 5, line 49 to Column 6, line 12), wherein the field-level encrypted match codes include at least one identification data field that is one-way encrypted (Column 5, lines 26-56);

Providing a database of master de-identified records, the master de-identified records comprising field-level encrypted match codes (Column 6, lines 54-65);

Comparing the match codes of the client de-identified records and the master de-identified records (Column 6, line 66 to Column 7, line 16; and Column 8, line 62 to Column 9, line 4); and

Linking at least a portion of the client de-identified records with the master de-identified records using comparison of the match codes (Column 6, line 66 to Column 7, line 16; Column 7, line 64 to Column 8, line 6; and Column 8, line 62 to Column 9, line 4);

But does not disclose encoding the at least one identification data field prior to encryption.

Morar, however, discloses encoding the at least one identification data field prior to encryption (Column 4, line 47 to Column 5, line 5; Column 8, line 55 to Column 9, line 53; and Column 11, lines 37-65). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the data obscuring system of Morar into the anonymous linking system of Zubeldia in order to increase the anonymity of the system by hiding the data further through various encoding and obscuring techniques, while allowing some uses of the data to remain unchanged.

Regarding Claim 37,

Claim 37 is a system claim that corresponds to method claim 18 and is rejected for the same reasons.

Regarding Claim 41,

Claim 41 is a method claim that is broader than method claim 18 and is rejected for the same reasons.

Regarding Claim 44,

Claim 44 is a method claim that corresponds to method claim 18 and is rejected for the same reasons.

Regarding Claim 19,

Zubeldia as modified by Morar discloses the method of claim 18, in addition, Zubeldia discloses assigning identification codes to the master de-identified records (Column 6, lines 54-65).

Regarding Claim 38,

Claim 38 is a system claim that corresponds to method claim 19 and is rejected for the same reasons.

Regarding Claim 42,

Claim 42 is a method claim that is broader than method claim 19 and is rejected for the same reasons.

Regarding Claim 20,

Zubeldia as modified by Morar discloses the method of claim 19, in addition, Zubeldia discloses appending the identification codes of the master de-identified records to the client de-identified records (Column 7, lines 28-38; and Column 7, line 64 to Column 8, line 6).

Regarding Claim 39,

Claim 39 is a system claim that corresponds to method claim 20 and is rejected for the same reasons.

Regarding Claim 43,

Claim 43 is a method claim that is broader than method claim 20 and is rejected for the same reasons.

Regarding Claim 46,

Claim 46 is a method claim that is broader than method claim 20 and is rejected for the same reasons.

3. Claims 26 and 28-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zubeldia in view of Morar and Halamka (Halamka et al., "Managing Care in an Integrated Delivery System via an Intranet", 1998, pp. 1-5).

Regarding Claim 26,

Zubeldia discloses a system that links de-identified records, comprising:

Obtaining client de-identified records, wherein the client de-identified records comprise first field-level encrypted match codes (Column 5, line 49 to Column 6, line 12); and

A database that stores a plurality of master de-identified records, wherein the master de-identified records comprise second field-level encrypted match codes (Column 6, lines 54-65);

Wherein the computer is adapted to compare the first field-level encrypted match codes and the second field-level encrypted match codes and link at least a portion of the client de-identified records with the master de-identified records based on a comparison of the first field-level encrypted match codes and the second field-level encrypted match codes (Column 6, line 66 to Column 7, line 16; Column 7, line 64 to Column 8, line 6; and Column 8, line 62 to Column 9, line 4), wherein at least one

field-level encrypted match code include at least one identification data field that is one-way encrypted (Column 5, lines 26-56);

But does not disclose that this is performed on a server computer or encoding the at least one identification data field prior to encryption.

Morar, however, discloses encoding the at least one identification data field prior to encryption (Column 4, line 47 to Column 5, line 5; Column 8, line 55 to Column 9, line 53; and Column 11, lines 37-65). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the data obscuring system of Morar into the anonymous linking system of Zubeldia in order to increase the anonymity of the system by hiding the data further through various encoding and obscuring techniques, while allowing some uses of the data to remain unchanged.

Halamka, however, discloses linking of de-identified records on a server computer (Page 1, Data Sources section). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the health care server of Halamka into the anonymous linking system of Zubeldia as modified by Morar in order to ensure that all information held within the server is held securely, only allowing those with access roles of the correct level to access the medical information.

Regarding Claim 30,



Claim 30 is a system claim that is broader than system claim 26  
and is rejected for the same reasons.

Regarding Claim 32,

Claim 32 is a system claim that is broader than system claim 26  
and is rejected for the same reasons.

Regarding Claim 34,

Claim 34 is a system claim that is broader than system claim 26  
and is rejected for the same reasons.

Regarding Claim 28,

Zubeldia as modified by Morar and Halamka discloses the system  
of claim 26, in addition, Zubeldia discloses a table used to facilitate a link  
of the at least a portion of the client de-identified records with the master  
de-identified records (Column 6, lines 54-65).

Regarding Claim 31,

Claim 31 is a system claim that is broader than system claim 28  
and is rejected for the same reasons.

Regarding Claim 29,

Zubeldia as modified by Morar and Halamka discloses the system  
of claim 26, in addition, Halamka discloses that the server computer  
comprises a communication interface used to receive the client de-  
identified records from one or more client computers (Page 1, Data  
Sources section).

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Regarding Claim 33,

Claim 33 is a system claim that is broader than system claim 29 and is rejected for the same reasons.

Regarding Claim 35,

Zubeldia as modified by Morar and Halamka discloses the system of claim 30, in addition, Zubeldia discloses that the master de-identified records comprise assigned identification codes (Column 6, lines 54-65).

Regarding Claim 36,

Zubeldia as modified by Morar and Halamka discloses the system of claim 35, in addition, Zubeldia discloses that the server is further configured to append the assigned identification codes to the client de-identified records (Column 7, lines 28-38; and Column 7, line 64 to Column 8, line 6).

4. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zubeldia in view of Morar and Halamka, further in view of Garvin (Garvin et al., "Ensuing Statewide Newborn Screening by Linking the New Jersey's Electronic Birth Certificate and Newborn Screening Databases", 12/1/1998, pp. 1-2).

Zubeldia as modified by Morar and Halamka does not disclose probabilistically linking at least a portion of the client records with the master records.

Garvin, however, discloses probabilistically linking at least a portion of the client records with the master records (Page 2). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the probabilistic linking methods of Garvin into the anonymous linking system of Zubeldia in order to obtain higher confidence in validity and quality of matches over deterministic matching and to allow the system to handle data entry errors.

5. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zubeldia in view of Morar, further in view of Schneier (Schneier, Bruce, "Applied Cryptography", Second Edition, 1996, pp. 193-194).

Zubeldia as modified by Morar does not disclose encoding records with a seed value to provide seed value identifiers.

Schneier, however, discloses encoding records with a seed value to provide seed value identifiers (Page 194). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the CBC with IV encryption scheme of Schneier into the anonymous linking system of Zubeldia as modified by Morar in order ensure that each piece of data is unique by forcing identical plaintext data to encrypt to different ciphertext, while allowing the seed to be sent in the clear, so that anyone can read it.

6. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zubeldia in view of Morar, further in view of Garvin.

Zubeldia as modified by Morar does not disclose that linking at least a portion of the client records with the master records comprises probabilistically linking at least a portion of the client records with the master records.

Garvin, however, discloses that linking at least a portion of the client records with the master records comprises probabilistically linking at least a portion of the client records with the master records (Page 2). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the probabilistic linking methods of Garvin into the anonymous linking system of Zubeldia in order to obtain higher confidence in validity and quality of matches over deterministic matching and to allow the system to handle data entry errors.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey D. Popham whose telephone number is (571)-272-7215. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571)272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey D Popham  
Examiner  
Art Unit 2137

  
**EMMANUEL L. MOISE**  
**SUPERVISORY PATENT EXAMINER**